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## EDITORIAL



## CHRISTMAS GOODWILL

Winter has barely passed us by before we have the annual catch-cry—only another 63 days to Christmas! The popular cry is taken up on all sides and once again—all too soon—Christmas is upon us with all its hurly-burly rush and tear, the two days' work that must be crammed into one, the last minute hustle for Christmas cards and presents, and perhaps the preparation for those long-awaited holidays.

Inevitably, however, the age-old sentiment and tradition of Yuletide retains its meaning in spite of the strain imposed.

We Amateurs, with only some 23 days to go, have a special interest in the goodwill of the season. Although many other institutions of a similar nature to our own also undeniably express their sentiments in the appropriate way, our own peculiar method is unique—the ability to communicate. For communication in whatever form it might take, broadens the outlook and breeds tolerance.

It is unfortunate that in this present era, "full" communication between all peoples of the world is, in some directions at least, taboo. Although at one time we could truthfully say "we Amateurs all batted in the one team," this is not strictly correct at present; and we feel in consequence that Amateur Radio is suffering momentarily from an international relapse.

We can, however, carry on that Amateur Spirit within our own sphere and promote the Amateur's fourth commandment—"The Amateur is Friendly." This arises not from the use of one's christian name—it goes much deeper—it is that leveller of all Amateur relations, the goodwill engendered by the welcome to the home of the mighty, the homely welcome to the shack of the humblest—the hand of friendship and goodwill that we literally radiate.

We might be thought quarrelsome by the outsider who did not know better, but when all is said and done, it is the relative few who often condemn the majority by not following the remainder of the Amateur's commandments. Such rebels and grouches are few, and it is these people who are not typical of the thousands of others who go about their hobby in a quiet and unobtrusive manner.

To the unfortunate few we say, may the spirit and goodwill of this festive season permeate your Scrooge-like feelings and join with the majority in deriving and striving for a little extra friendliness and goodwill in the season of Christmas that lies ahead.

CHRISTMAS GREETINGS AND  
A PROSPEROUS NEW YEAR TO  
AMATEURS EVERYWHERE.

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# AN ELECTRONIC KEYS

BY E. A. MARSTELLA,\* VK2AEZ

SINCE the war, electronics have achieved considerable success in many different spheres and the Radio Amateur has benefited by some of these achievements. The one that we are interested in is the Electronic Keyer.

Good operators were very much in the fore before the war, but these days Amateurs are not very much interested in c.w., preferring the use of phone as a medium, no doubt due to lack of practice or ability or both. Use of the hand key is a somewhat tedious task if used for a long time, taking quite a lot of practice and time to be versatile in speed and precision, and usually finishing up with a glass arm. The bug key overcame a lot of the tediousness of the hand key, but precision was usually at fault by using incorrect dot to dash ratio or visa versa.

The Electronic Keyer will fulfill or even surpass the difficulties found by other manual means of keying, but, of course, you must be its "master." Gone will be the days of sorry "misses" or "missed that" and gone will be the "QLF" attitude from other operators. This Electronic Keyer is simplicity in itself, and being modified from an overseas design, is easy to build and get going and the components readily available.

## CIRCUIT

Referring to Fig. 1, it will be seen that it is simple and one of its main features is that the h.t. positive is earthed which, of course, grounds the paddle of the key (other keyers have their paddles at h.t. above earth) which is a good safety angle. Only one relay is used as compared with two or more with other keyers and the relay is not very critical provided it is reasonably sensitive to current changes.

V1 is the audio oscillator of which R2, R3, R4, L1, C1 from the oscillatory circuit. R5 is the key up plate load to give a smoother keying and is shunted by either portion of R1 when paddle is made the dash or dot contact. It is known that when the h.t. potential to an oscillator has been changed a different frequency will be the result, so by this means we can get two frequencies from the audio oscillator. If the potentiometer R1 is set in such a position and the paddle is in the dot position an audio frequency oscillation of some time interval will result, and when the paddle is in the dash position a lower frequency oscillation will result. By this we can see that the potentiometer setting of R1 is set to one side of centre causing h.t. potential on the plate of V1 to differ for a dash and a dot. This control is called the **dot-dash ratio control** and once its correct position has been found it is never further adjusted.

Having now obtained audio oscillations at two different frequencies from the audio oscillator to correspond to a dot and a dash, we now need the means of varying the rate of these two frequencies. Referring to Fig. 1, if R2 were

to be made variable we could alter the time constant of the oscillatory circuit and therefore the speed could be altered. This control is called the **speed control**.

The inductance used in the oscillator at this station is a 10,000 ohm plate to plate speaker transformer, but anything push-pull audio should do provided it has sufficient inductance. The altering of either C1 or R4 will alter the time constant of the circuit, the larger the C or R, the slower the speed of the keyer. If bigger range of speed is needed, the speed control R2 could be increased to 1.5-2 megohms and C1 reduced. The speed of the writer's keyer has a range of 6-35 w.p.m.

There now appears on the cathode of V1 an a.c. pulse for either a dot or a dash and these pulses are used to trigger the first section of V2 or the relay tube.

type, is about 2 1/2" high, and the other known as P.M.G. type 600, or **minor** type, which is about half the size of the 3000 type, are the best known. The more contact springs on the relay the less sensitive will be the relay. The relay only requires one set of contact springs "normally open" or "make." The coil resistance is not very critical as the adjustment of the **mark to space control** can compensate for different values of coil resistance. Any relay with a coil resistance of from 1000 ohms to 5000 ohms should be found satisfactory, on higher values of coil resistance the value of the **mark to space control** R5 may need to be increased in value. Although only one set of "make" contacts are required, any relay having a different set-up of spring contact assembly can be used provided

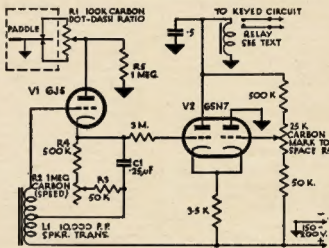


Fig. 1.—Circuit of Electronic Keyer.

The second section of V2 functions as a control tube for the first section by controlling the bias of that section, the response from the audio oscillator makes this necessary and the correct operation of the relay tube can be maintained by adjustment of R5. This control is called the **mark to space control** and together with the negative potential to the relay, smoother operation of the relay will result.

With unequal response from V1 the adjustment may be necessary when the speed control R2 is altered to a different speed by any great amount, otherwise dots and dashes may either sound clipped or made too long. Actually R5 needs very little adjustment at all speeds.

**RELAY** The most important component in the keyer is the relay and the final result will depend on this item. A large number of different types of relays are available in various types of disposal equipment and can be bought ex stock. P.M.G. type 3000, or **major**

the relay is sensitive enough; the faster the keying speed, the more sensitive the relay has to be.

The dash character has to be three times that of the dot character for any given speed, consequently the armature of the relay does not travel as far for a dot as it does for a dash. The travel of the armature is adjusted by using the residual screw on the top of the armature or by bending the armature by trial and error until the contacts "make" dots on all speeds. Some relays have fitted buffer springs or buffer blocks or both and the return to normal of the relay armature is readily obtained. The relay used at this station is a type 600 of the older series, being neither fitted with buffer springs or buffer block, so the relay was mounted on a piece of aluminium bent into a right angle and the relay mounted in such a way as to be fitted inside of an MN26 i.f. can and screwed to the can, making it dust-proof, and a piece of sponge rubber was glued to the piece of aluminium bracket

\* 64 Railway Street, Gosford, N.S.W.



behind the relay contacts which had the effect of cushioning the contacts, preventing excessive rubbing of the contacts which caused a metallic type of keying.

Ordinary contacts of a relay take approximately 150 Ma. for a single contact to 300 Ma. for the double contact type. The usual key click filter will, of course, be still needed. The capacitor across the relay is to by-pass the a.c. component, otherwise the relay will chatter.

**PADDLE** The next important part of the keyer is the paddle and can be mounted on the chassis or be a separate part of the keyer and mounted on the operating bench. If you have a bug key, it will be an easy matter to modify. Remove the spring dot contact on the bug and substitute a contact similar to that of the dash contact. The vibrating arm of the bug is made fast by screwing the adjusting screw at the end of the vibrating arm towards the arm so as to make it immovable.

A means of returning the paddle to its central position will be needed, but this will depend on the type of bug you have. Make sure that the dot and dash contacts of the paddle are insulated from each other and to the paddle, otherwise a continual dot or dash will result. If the paddle is "made" to the dot contact and held in that position, a series of dots will result until the paddle is released and the same will be the result if the dash contact is "made," except a series of dashes will be made. Avoid the use of bugs that have two paddles (one for the dot and one for the dash) as you may find that you can press both paddles together and the result will be a dash.

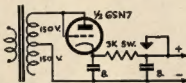
The system used by the writer is a piece of  $\frac{1}{8}$ " x  $\frac{1}{8}$ " brass pivoted in the same manner as a bug arm is pivoted and mounted on a piece of bakelite or similar insulated material. On each side of the pivoted arm, a piece of  $\frac{1}{8}$ " round brass is mounted at about  $\frac{1}{2}$ " or so from the pivoted arm centre and to the rear of the pivot. The  $\frac{1}{8}$ " brass is drilled and tapped to take a small screw at the correct height so as to give a dot contact on one side and a dash contact on the other side. Springs can be fitted over the small contact screw and insulated from the moveable paddle arm to prevent shorting the dot or dash contact, a nut on the contact screw to give the best spring tension and to bring the paddle to centre each time it is released is behind the spring. It will probably be necessary to use nuts to lock the both contact springs, otherwise they might loosen up.

Instead of the springs, a piece of flat spring could be attached to the end of the paddle to give the same effect as the springs and fastened to the bakelite base; the size of the spring will depend on the tension required. It should not be very hard to devise some scheme when you have the idea. A couple of pieces of bakelite can be fitted to the operating end of the paddle as in the case of the bug key and a reversing switch can be used if needed for the use of left handed operators.

**POWER SUPPLIES** For the power supply two types have been used at this station with equal success. In the half wave supply (Fig. 2) the 6J5 audio oscillator valve was replaced with a 6SN7 valve and one section was used as the audio oscillator valve and the other section was used as the rectifier.

In the full wave supply (Fig. 3) the 6J5 remained and a 6X5 valve was used as the rectifier valve.

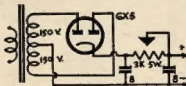
The transformer used was a small 150-0-150 v. at 30 Ma. Make sure that the electrolytics are insulated from the chassis, otherwise you will have a short circuit. The first electrolytic may not be necessary, depending on the type of transformer used. Output voltage of about 170-200 volts is all that is necessary for operation of the keyer. Perhaps there is an old "B" eliminator lying about which could be used.



**HALF WAVE POWER SUPPLY**  
Fig. 2.

The complete unit with power supply was built on a chassis  $5\frac{1}{2}$ " x 5" with a front panel 8" x  $5\frac{1}{2}$ ". On the front panel was mounted h.t. centre tap switch, speed control, mark to space control and the dot-dash ratio control. The dot-dash ratio control has the shaft cut off and a slot made for a screwdriver as this control, once its correct position has been found, is never altered unless circuit change has been made; if you care, it can be mounted inside the unit.

On the back of the chassis a terminal strip or a socket is mounted to take three leads from the paddle and two leads to the keying circuit in the transmitter, making five leads in all.



**FULL WAVE POWER SUPPLY**  
Fig. 3.

**CONCLUSION** Having completed the keyer, the only adjustment needed is to get the dot-dash ratio correct in conjunction with the mark to space setting. Set the speed control about halfway and the dot-dash ratio control at about one-third of its travel; now depress the paddle into the dot position and adjust the mark to space control through its range until the relay operates, now move the paddle over to the dash position, it could be possible that the keyer is giving the reverse procedure, that is dashes instead of dots, and if this is the case reverse the dot and dash leads to the paddle. It should

not be very difficult to get correct dot-dash ratio by ear or by using an ohm meter across the relay contacts.

All that is required is some practice by starting at a slow speed on an oscillator. Don't brag about sending at 30 w.p.m. if you cannot send at even 15 w.p.m. This electronic keyer is an acquisition to any shack. Here's hoping to see you all electronic keying on the bands one day.

## LADIES BEWARE! THE TALE OF THE PURLOINED TEASTRAINER

When the writer decided that the quality provided by a G.P.O. carbon microphone was not all that it might be, a crystal insert was obtained. Then began the search for a suitable container.

At testime, while idly watching the XYL pour out the cup that cheers, the idea of using a teastainer for the job was born. Later, when the coast was clear, the article in question was stealthily removed from the cupboard and taken into the shack. It was just the right size to carry the crystal insert.

A piece of aluminium the size of the circular rim of the teastainer was cut to provide a back. The insert was then fitted into the strainer facing outwards, a piece of rubber placed on its back and the aluminium back plate pressed on and fixed in position with self-tapping screws. Ordinary television coaxial cable, brought out through a rubber grommet, was used for the microphone lead and bound to the handle.

Some days later, after an exhaustive search had failed to locate the missing strainer, the lady of the house saw it in the shack. Then the OM really learnt the names his parents had forgotten to give him! However, a visit to the local emporium secured another for sixpence, but unfortunately the bunch of flowers and the box of chocolates bought to "soothe the savage breast" made the whole job rather more expensive than expected!

The moral for anyone who contemplates using a similar gadget for their crystal insert is—go and buy one; it will be cheaper in the long run!

—R.S.G.B. "Bulletin," June, 1954

## DX C.C. CERTIFICATES

It has been brought to the notice of Federal Executive that the DX C.C. Certificate will need to be reprinted in the near future, as stocks of the present one are now very low.

As this is a most sought-after award, it is imperative that the Certificate is worthy of its place of honour. Keeping this in mind, Federal Executive feels that a new design might be of interest to members and would be willing to print another now that this is due.

In order to encourage interest and competition for a suitable design, the Federal Executive will award a prize of Two Guineas to the entry which they consider most satisfactory for the Certificate.

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# AT5 REBUILT AND MODIFIED

BY A. W. WINTER,\* VK5DR

MANY articles have been written on all types of disposals gear, but few, if any, have appeared in "A.R." on the AT5 transmitter, which is still available at a reasonable price. One was purchased some three years ago by the writer, and from it a cheap and efficient rig has been built.

As it stands, the AT5 is not an ideal transmitter from the Amateur's point of view, but with a few modifications can be quite useful.

Firstly the final, which is 807's in parallel, was built on a 17" x 10" x 3" chassis for rack mounting, also on the same chassis is the 807 buffer-doubler and a 6V6 buffer-doubler using the modulation tube from the AT5 for the latter.

The only alterations to the final were: Tuning condenser was cut down to 25 plates, the tank coil transferred to the junk-box, and appropriate coils wound for each band.

The screen supply was taken from the plate supply through a 30,000 ohm 25 watt resistor. A key jack was placed between the centre tap of R27 and R30.

In the 807 buffer-doubler stage, the tank circuit was replaced with a 50 pF. midjet variable with coils wound to suit. The 6V6 buffer-doubler stage is more or less the usual.

Now to the VFO. This was completely wrecked, using the gang for antenna tuning. The 3.2 to 4 Mc. coil was used for the existing VFO by taking off turns until 27 remained, and then building the circuit of Fig. 1 on a separate small chassis with the dotted portion shielded by a small metal box. The 190 pF.

silver mica condensers came from the low frequency oscillator unit.

With correct adjustment of the coil slug and C4, 3.5 to 3.6 Mc. can be spread over 180 degrees of the dial, which is far better than the original unit could do, i.e. 3.2 to 4 Mc.

I believe there are a good number of AT5-AR8 manuals to be had, but for those interested in the conversion, the circuit as used at this station is diagrammed in Fig. 2 with the numbers of the components shown to correspond with those clearly marked on the terminal strips of the AT5 itself. The very few additional parts that were required are shown with the component value.

After building this rig, quite a number of useful parts such as switches, ceramic coil formers, condensers, resistors, etc., remained for the junk-box or what have you.

So it can be seen that a VFO with bandspread, plus three stages, can be had for approximately £10, less power supply.

Prior to going off the air two years ago, through lack of suitable power, the writer used this rig with only 15 watts input to the 807's and worked 69 countries in 10 months of operation—so go to it chaps. Oh! I forgot to mention that besides the transmitter, I was using five wavelengths vee beams.

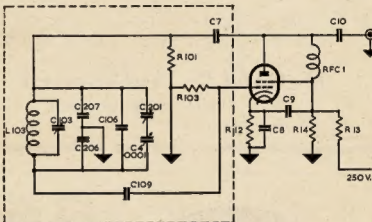


Fig. 1.

C207 and C206—190 pF, silver mica from low frequency oscillator.  
L103—See text for alterations.

\* Cape Bords Lighthouse, via Kingscote, Kangaroo Island.

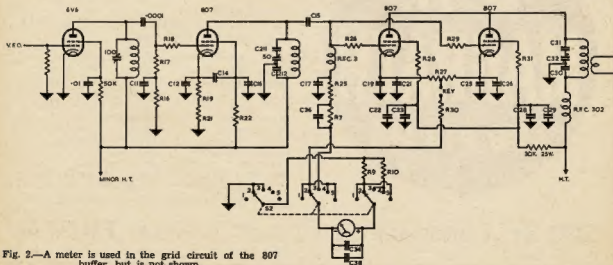


Fig. 2.—A meter is used in the grid circuit of the 807 buffer, but is not shown.

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# THE COMPLETE AMATEUR

PART TWO

BY TOM ATHEY,\* VK4UT, A.I.R.E. (Aust.)

## SECTION FIVE

### System for Monitoring Your Outfit

As this article will complete the series, I feel that it would be inadequate if an article on the monitoring of your rig was left out, so here are my suggestions to you.

For the c.w. man his requirements are fairly simple. To monitor the output it is necessary to feed part of your output back into your phones or speaker so that any chirps or birdies can be checked and eliminated. To do this, feed back a small portion of your output to a small battery receiver—a one valve will suffice. Build up a simple regenerative receiver using say a 1T4 as a triode. Coupling to the final may be obtained by using a pick-up loop located near your tank coil. Note.—As your tank coil has high r.f. voltage on it, care must be exercised to avoid accidents in coming in contact with it. This r.f. loop picks up the signal transmitted and allows you to hear what you are sending. The receiver can also be used as a means of monitoring your speech output, however it is not a very good method of checking a.m. to your final as no indication is given to distortion other than what you can hear.

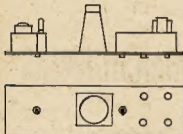


Fig. 1—The front panel and location of main components.

For the amplitude modulations boys I suggest they build up a c.r.o. because it will not only give you a visual pattern of your output, but has many other uses around the shack. The system I intend to describe is a very small one, requiring very few parts and is intended to be mounted right into the rack. Thus by using the small audio oscillator described in a previous article, you can adjust your rig for maximum output free of distortion, or in other words 100 per cent. modulation.

By using the negative peak high level filter shown in this series' modulator, you can boost up the positive peaks and by using a clipper circuit in the speech amplifier you can flatten out those peaks with the result that you can improve your transmitter output power without increasing your input to the final. However, as far as the newcomer is con-

cerned I think he should stick to the conventional method of obtaining 100 per cent. modulation.

The c.r.o. about to be described here will give—

- An indication of the percentage level of his modulation.
- A visual pattern of the waveform of his output.
- The instantaneous peaks, both positive and negative, which contribute so much to splatter.
- Whether he is over modulating or under modulating.
- The cost of the unit will be quite reasonable for the results he will obtain.

Before going on to the actual description of the c.r.o., a word in passing on another method of obtaining level indications. This unit is known as a modulation monitor with a flasher level indicator. This is the type used by most of the broadcasting companies and can be calibrated to show instantly whether the peaks are in excess of a predetermined level. However these units are much beyond the pocket of Amateurs.

The c.r.o. in this article is a 2" type. A 2AP1 will do nicely, or a 1 inch type will do if you mount it behind a magnifying glass. The rack size of the panel is 19" x 5½" (see Fig. 1).

Referring to Fig. 2, it will be seen that the c.r.o. tube requires about 800 volts to make it operate. To get this voltage an ordinary replacement type transformer is used, the two windings of the secondary being used as a half wave rectifier. The valve used is a 2X2, fairly easily obtained from the various valve stores or from the advertisers in "A.R." The sweep voltage is obtained by using a small audio transformer having a turns ratio of 1:1.

Other points to note are that the panel is used to mount the components to, a small sub-chassis is used to house the wiring of the power pack and the sweep circuit controls are also housed in another sub-chassis attached to the other end of the panel. The c.r.o. tube is mounted in the centre of the panel and its socket is free and is over the pins like a speaker plug.

To support the tube get a mu-metal shield to fit the tube, solder retaining brackets to the wide end and bolt it to

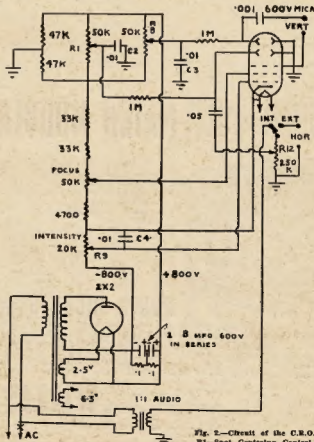


Fig. 2—Circuit of the C.R.O. R1—Spot Centring Control.

\* Ex-Instructor Q'land Division W.I.A. Classes, 41 Mountford St., New Farm, Brisbane.

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the panel. If these directions are followed, you will obtain a pleasing panel appearance and have a modulation monitor well worth having.

The circuitry is easy to follow and should present no difficulty to any Amateur. The condensers C2, C3, C4 are connected directly to their respective potentiometer rotor arms R1, R3, R5. These by-pass condensers are used to control and eliminate the a.c. component from the d.c. control circuits in the sweep circuits.

As stated before, the socket is not fastened to any of the structural parts of the chassis, but is used as a plug. The socket pins are covered by a metal shield with two holes cut into the sides to permit entry of the leads for filament and the d.c. leads. The latter is a shielded cable as are all terminal leads.

Both of the transformers are mounted externally to their respective sub-chassis. The four potentiometer controls and the sweep switch are mounted together and enclosed in a metal shield. Wiring of the power unit is also enclosed in its sub-chassis. Care in wiring the circuit should result in no mistakes as the circuit is very simple. Make sure that you get linear taper potentiometers for the four controls. I.R.C. make them, but you may have to order them as they are not a normal stock item.

## USING THE SCOPE

To obtain patterns, it is possible to use the scope in two ways:—

1. To show a wave envelope modulation pattern, or
2. To show a trapezoid or wedge shape pattern.

Connections to obtain either of the patterns are shown in Fig. 4.

**Wave Envelope Pattern.**—Place a small pick-up loop in close proximity to the final tank coil and vary its position until you get a pattern as shown in Fig. 3b. When you speak into the microphone you will get a rapidly varying pattern envelope. When the peaks swing the

pattern to twice the width of the unmodulated pattern, you have obtained 100 per cent. modulation as shown in Fig. 3d. Figs. 3c and 3e represent under and over modulation.

If you feed your audio oscillator into the microphone input use the highest frequency that it has—3,000 cycles. Remember that the modulation percentage is based on the highest frequency being used as the frequency excursions will control the peak voltage developed. As Amateurs' voices rarely exceed 3,000 cycles, adjust your modulation for 100 per cent. at that frequency and all will be well. Connections to the c.r.o. are shown in Fig. 4a.

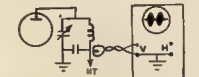


Fig. 4a—Connections for Wave Envelope Pattern.

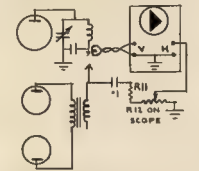


Fig. 4b—Connections for Trapezoid Pattern.

**Trapezoid Pattern.**—To obtain this pattern refer to Fig. 4b. Here you will see that audio from the modulator is required. The scope sweep switch is moved to external sweep position and the audio is fed to the horizontal terminals. When the two frequencies are placed on the scope plates, you get a triangular pattern on the scope screen. These patterns are shown alongside the wave envelope patterns (Fig. 3) and in a similar position to indicate the correct modulation percentage.

**Warning.**—It is necessary to use a resistor R11 between the horizontal input terminal and the coupling condenser from the modulator. The value of this resistor is arbitrary, but if the horizontal control potentiometer is of 250,000 ohms, the resistor should bring up the total resistor value to 250,000 ohms for every 150 volts of modulation output.

For example, if the modulating voltage is 600 volts, the total resistance should be 600/150 times 250,000 ohms. This equals four times quarter megohm or a total of one megohm. Therefore the fixed resistor would be 750,000 ohms.

The blocking condenser should be 0.1 uF. or more, rated to carry the voltage safely. The rest of the set-up is obvious and with this set-up you should be able to control your modulation in such a way that you will avoid the pitfalls of "splatter."

## HINTS AND KINKS

### TESTING CONDENSERS

After building sundry pieces of apparatus with varying degrees of success, I found that most of my trouble was due to faulty condensers, so I decided to "Megger" each condenser and resistor prior to putting it to use. I was surprised to find half of the Condensers used in one article useless, even some of the new ones being faulty.

I then tested all the Condensers in the junk box, both paper and mica (many of my stock were taken from disposals apparatus), and found 40% were bad, so discarded them.

I used a 500 volt constant voltage "Megger," and any Condenser reading below 10 Megs. was considered unfit for most jobs (even the 10 Meg. ones were treated with caution). Many had resistances as low as 60,000 ohms, some 600 volt working being as low as this.

Admittedly the test voltage (500) was high, but when it is considered that many paper Condensers designed for a working voltage of 250 are tested with 600 volts DC, the "Megger" test is not quite so severe.

Since adopting the "Megger" test, most of the pieces of apparatus I build work first try.—VK5CH.

### OPERATING A.C. RELAYS

A means of operating a.c. solenoids and relays from a lower voltage is to use a series resonant circuit. Resonance may be found by connecting the circuit to a very low voltage with a volt meter across the coil and adding capacity, at the same time opening and closing the armature by hand and noting the voltage reading. When resonance has been obtained, the capacity should be adjusted until resonance occurs when the armature is approximately three-quarters closed.

For an example, if a 415 volt coil is to be used on 240v. 50 cycles, a capacity of between 2 and 4uF. may be required with a voltage rating of at least 600 volts. A convenient voltage for testing is about 50v. When the circuit is put into service, the armature should close smartly passing through resonance and coming to rest with the correct operating voltage across the coil. Relays particularly suitable are direct-on-line contactors, which are often used for small motors.

### SMALL FILAMENT TRANSFORMERS

A convenient and economical source of small filament transformers is output transformers. For an example, an impedance ratio of 5,000:3.7 will give a step-down of 240 volts to 8 volts. The current drain is limited though, to the diameter of the wire.

—R. K. Wilson, Burnie, Tas.

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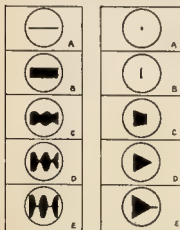


Fig. 3.—Left: Wave Envelope Patterns.

Right: Trapezoid Patterns.

A—No Carrier

B—Carrier

C—Under Modulated.

D—100 per cent. Modulated.

E—Over Modulated.

# STABLE V.F.O. OPERATION AT 144 Mc.

BY DR. ROBERT H. BLACK,\* VK2QZ

THE frequency determining device for the great majority of stable 144 Mc. transmitters is a quartz crystal oscillator operating at its fundamental frequency of 8 Mc. or on an odd overtone. V.F.O.'s at 3 Mc. are not inherently stable and the fundamental frequency of oscillation must be lowered to 4 Mc. or even 2 Mc. to secure stability. This means that the frequency must be multiplied 36 or 72 times for output at 144 Mc. and any drift in the oscillator is multiplied 36 or 72 times at the output frequency. In addition, a special frequency range is required for the v.f.o. which differs from the range used for the usual high frequency Amateur bands.

The method described in this article for v.f.o. operation at 144 Mc. allows the use of output from a v.f.o. at about 3 Mc. and there is only a threefold multiplication of this signal frequency. This should give better stability at 144 Mc. than is obtained with the same v.f.o. at 14 Mc.

Briefly, the procedure in the experimental set-up was to use a crystal oscillator and multiplier to take the signal frequency to 45 Mc. and then output from the v.f.o. at 3 Mc. was fed into the system. The added signal frequency was then 48 Mc. which, when multiplied three times, gave output at 144 Mc. Fig. 1 illustrates this procedure.



Fig. 1.—Method of obtaining Stable V.F.O. Output at 144 Mc.

The crystal oscillator and frequency multiplier stages are standard and require no detailed description; sufficient output for the purpose was obtained from a single 6J6 overtone oscillator

\* "The Chalet", 2 Verdon Ave., Hunter's Hill, New South Wales.

and doubler. The v.f.o. in the experimental set-up was a Type 19 transmitter operating at reduced voltage—similar output would be obtained from a 6V6 in the output stage of a v.f.o.

The mixer stage was derived from the balanced modulator of single sideband technique. The circuit diagram (Fig. 2) shows the method of feeding the input signals at 45 Mc. and 3 Mc. into a single 6C4 which acts as a mixer. The output circuit of this tube is tuned to 48 Mc.

Obviously there are signals at frequencies, other than the one at 48 Mc., appearing as the result of mixing the two signals of frequencies 45 and 3 Mc., as well as the possible harmonics of these frequencies, so that some means of filtering out the unwanted signals is necessary.

In addition, the output at 48 Mc. is relatively small. These two features both contribute to the desirability of isolation-amplifier stages following the 6C4 mixer. Link coupling from the 6C4 to the next stage should reduce the harmonic content of the signal.

In the experimental set-up the two stages following the 6C4 used a 6AQ5 and a 6AQ5. Sufficient output was available from the 6AQ5 for the use of a 5763 as the frequency multiplier for output at 144 Mc.

The use of a grid dip oscillator aided the identification of the various signals encountered in tuning.

Output from the 5763 is adequate to drive an 832 or it can be fed direct into the antenna as was the case in the set-up described here.

## COMMENT

The method presented is by no means new; it has been used locally by McMahon (1951) for a frequency meter and has been described for v.f.o. operation at v.h.f. by French Amateurs (in a journal of the R.E.F., which is not available to the writer for reference).

The use of a v.f.o. eliminates the rather difficult task of locating a suitable 8 Mc. crystal.

With suitable v.f.o. output frequency, the crystal frequency can depend on the crystals in stock. The v.f.o. used for lower frequency operation with output at 3.5 Mc. could be used with a crystal at about 7.4 Mc.

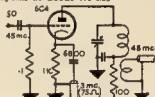


Fig. 2.—6C4 Mixer with grid injection of Crystal controlled signal at 45 Mc. and cathode injection of v.f.o. signal at 3 Mc.

The v.f.o. can be subjected to frequency modulation, using a diode, as reported by Taylor (1953).

During operation, the v.f.o. can be kept running continuously as it does not interfere with the received signal.

Netting is not a critical operation as it would be if the frequency of the v.f.o. were being multiplied 36 or 72 times.

The technique could also be employed for the construction of a heterodyne frequency meter for the 144 Mc. band; there would be adequate third harmonic output from the 6C4 mixer for this purpose.

This brief account is put forward for further development by interested v.h.f. enthusiasts, but the system as described provides very stable output at 144 Mc.

## REFERENCES

- McMahon, L. B. 1951. "Simple Frequency Meter for Amateur Bands." "Amateur Radio," Vol. 18, No. 6, p.3.  
Taylor, A. F. 1953. "Diode F.M." "Amateur Radio," Vol. 21, No. 1, p.8.



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# WIN FOR SOUTH AUSTRALIA

Congratulations to the South Australian Division for winning the Remembrance Day Contest for 1954 by a narrow margin from Western Australia.

Despite the rules which appear to favour the smaller States, the Contest continues to maintain its popularity. This year a total of 457 logs was submitted, there were also four listeners' logs. Many logs were not submitted and the number is estimated at 200, a shadow on what was otherwise one of the finest contests which we have had.

It was noted that stations in T.N.G., Papua, Admiralty, Macquarie, Heard and Cocos Islands participated and again these stations in the Territories gave the Contest added spice. Logs from Macquarie and Heard Islands were transmitted by radio to VK5JT and VK5MS respectively, and as was the case last year, all concerned must be congratulated on the effort they made in getting the logs to the Contest Committee in time for checking.

Propagation conditions prevented bands higher in frequency than 14 Mc. being used (a few contacts on 21 Mc. were made). For those who followed the prediction charts, the estimated times for the opening and closing of the bands was borne out in operating.

Although the number of logs did not vary from the previous year, the top logs generally showed a marked increase in the number of contacts and some scores were very close to 900. This year the rules provided for awards to the top phone, open and c.w. scorers in each Division. In addition, the Committee made awards to the top scorers in VK1 and VK9 call areas; and to the two listeners who submitted very large logs. This change in the awards considerably increased the time required for checking; for you will see on perusing the scores that the winners of the c.w. section did not come usually in the top six logs.

As received, the logs showed that Western Australia and South Australia had practically the same points. It was therefore necessary to make a complete check of all logs of these two Divisions to decide the winner. A really formidable task! A full check of logs of all contenders for individual awards was made and between 8,000 to 10,000 individual entries on logs were checked!

A very gratifying feature of the log checking was the effort by the contestants to make their logs easily read and assessed. The use of the standard log sheets assisted materially towards that end. The Councils of the various Divisions should also be pleased to note that the country members were well to the fore in the honours list.

The Committee desires me to record its appreciation of the efforts of the members in VK5 Division who freely gave of their time in the same spirit that the Contest was played. Those members, too, appreciated the very able way that the Contest Manager, Jim Vivian, VK5FO, organised their time to the best advantage. Our thanks also go to the South Australian Hon. Secretary, Reg. Harris, VK5RR, who received the

logs from the post and got them ready for the Contest Manager.

And now it remains for me to thank you for what I consider was a really fine contest. Truly I can now say that the spirit of unselfishness and love which gave birth to the idea of the contest will stay alive.

*"By your acts of grace,  
They shall so live."*

G. M. BOWEN, Chairman Contest Com.

## THE TOP SCORERS

### South Australia

VK5MS	895	Average Score	731.50
5RG	835	Licenses in State	347
3EN	782	Logs	66
5WC	673		
5FO	602	Total Points	870.63
5WO	602		

### Western Australia

VK6FL	773	Average Score	629.83
6RU	740	Licenses in State	196
6GU	642	Logs	89
6DX	634		
6MK	513	Total Points	848.35
6TK	477		

### Tasmania

VK7DZ	631	Average Score	515.50
7AI	612	Licenses in State	107
7PM	583	Logs	43
7WN	501		
7SF	421	Total Points	722.66
7LJ	345		

### Victoria

VK3ATN	897	Average Score	609.17
3ADW	667	Licenses in State	949
3FH	606	Logs	122
3HG	552		
3ALQ	489	Total Points	687.48
3XK	444		

### Queensland

VK4SF	699	Average Score	560.17
4PQ	590	Licenses in State	318
4FP	548	Logs	49
4AB	531		
4EC	510	Total Points	646.48
4TN	483		

### New South Wales

VK2AMR	613	Average Score	559.00
2JU	588	Licenses in State	1030
2AHH	575	Logs	80
2RS	536		
2GW	535	Total Points	662.42
2AKV	507		

## AWARDS

### Open

VK1AC	966	VK5RG	835
2AHH	575	6FL	773
3ATN	897	7OM	313
4SF	699	9DB	531

### Phone

VK2AMR	613	VK6DX	634
3ACE	426	7DZ	631
4PQ	590	8FN	531
5MS	895		

### C.W.

VK1GA	246	VK5KU	352
2XZ	325	6EZ	141
3ZO	201	7LJ	345
4WH	211	9WZ	105

### Listeners

F. H. Price, 656; N. G. Clarke, 585.

## POINTS CLAIMED AND ALLOWED

State	Claimed	Allowed
VK2	3508	3354
VK3	3738	3855
VK4	3450	3361
VK5	4554	4389
VK6	3980	3778
VK7	3155	3097

## OTHER LOGS

### TERRITORIES

VK1AC	966	VK4DR	831	VK9WZ	106
1GA	246	8FN	831	8WZ	97
1DA	180	8F	248	8H	71
1DY	42				

### NEW SOUTH WALES

VK2BO	583	VK1AVS	139	VK3ARO	38
2ZY	787	2AMH	137	2VC	36
2PC	348	2AGW	130	2AGW	35
2ABZ	335	2OI	128	2AFJA	33
2XZ	330	2AGJ	125	2VW	33
2AO	305	2AGJ	121	2VW	32
2VU	293	2IC	99	2ADL	31
2OE	285	2VW	91	2ACGN	30
2EM	285	2PM	86	2AGJ	29
2ASA	280	2AJS	81	2OA	30
2KQ	236	2JY	80	2EI	28
2PP	231	2YB	78	2AGQ	28
2OT	215	2AUP	77	2EA	25
2AQ	208	2ASE	76	2AUA	25
2AQ	208	2AUA	70	2AGW	24
2AYS	191	2AGI	70	2ZG	23
1ABE	188	2PM	67	2APQ	23
2SR	178	2JZ	65	2BG	20
1AHP	174	2PU	45	2OZ	20
2FA	174	2AJK	41	2PL	19
2SV	168	1AWN	41	2WI	14
2AHM	160	2AKZ	39	2AGT	13
2PN	158	2PZ	38	2ADT	12
3ACD	147	2JA	39	2CV	9
3PY	145			2AVG	9

### Victoria

VK3ADI	431	VK3WM	108	VK3ACJ	33
3ADW	426	3LV	107	3AG	32
3ABZ	425	3AJP	102	3DG	25
3XK	425	3AWB	95	3RH	25
3ZK	425	3AJP	95	3AG	25
3ZA	354	3AHP	97	3ACXK	31
3OM	346	3YS	88	3TB	31
3ZK	346	3EX	88	3AG	31
3UR	303	3GG	87	3VQ	28
2AJU	278	3TX	82	3LR	28
3KZ	265	3ALY	82	3AG	27
3OK	265	3JE	79	3ARJ	26
3AKO	240	3OZ	70	3ALI	26
3ALP	239	3AJA	74	3FD	24
3ACN	239	3VQ	73	3AGV	24
3WQ	230	3ARL	71	3AIM	23
3AGD	215	3ASH	70	3PC	23
3OI	201	3ZG	69	3AG	23
3DU	197	3AWS	69	3AHK	22
3DY	190	3ALE	69	3QU	22
3ZG	186	3ABP	68	3AG	21
3ANO	180	3ARV	68	3QZ	21
3TV	173	3ADU	66	3BQ	20
3ZK	171	3AG	65	3AGH	19
3CX	171	3ABH	60	3BH	19
3AIG	163	3VZ	59	3IE	18
3AG	160	3AGV	58	3AGK	17
3PR	153	3AKW	53	3AID	17
3RN	154	3BN	50	3CE	16
3ZK	147	3ZG	48	3ZM	16
3AGV	145	3DQ	45	3ZM	14
3ZV	138	3AXX	45	3APF	13
3GE	137	3ED	44	3GO	13
3ZG	135	3UP	43	3AAP	12
3RV	135	3ZU	43	3ABA	12
3ZK	134	3ZC	42	3AG	12
3AT	134	3ALD	40	3AG	10
3AJ	108	3AGP	40	3XJ	10
3AMH	108			2AYM	7

### Queensland

VK4PU	478	VK4JD	93	VK4AW	24
4DI	438	6OR	81	4PA	24
4GZ	429	6OG	79	4ZL	22
4TY	361	6HZ	52	4HM	21
4HQ	354	6AO	49	4XL	20
4CC	330	6AO	48	4ZM	17
4WC	270	4RW	44	4KS	15
4ZP	221	4YA	34	4XC	14
4WH	211	4LE	31	4FT	11
4JF	108	6CY	29	4ZB	9
4JF	108	6CY	29	4BG	7
4PT	105	4YS	27	4MT	6
4PT	105	4RE	25	4BY	6
		4NG	25		

(Continued on Page 12)

# AMATEUR CALL SIGNS

FOR MONTH OF OCTOBER, 1954

## ADDITIONS

**NEW South Wales**  
 2WK-A. J. B. Kelso, Wambrook Radio Station, R.M.B. 6A, Adamaham Road, Cooma.  
 2AAV-A. I. Dunnicutt, 69 Duff St., Broken Hill South.  
 2ADI-D. E. Sidler, 448 William St., Broken Hill.  
 2AIR-A. J. Smith, 19 Benheim St., Croydon.  
 2ANZ-P. Shortall, Station, 21 Orwell St., Potts Point, Sydney, Postal: P.O. Box 3408, Sydney.  
 2ASG-S. K. Broadbridge, C/o. Radio Station 268 Grafton.  
 2AWR-R. M. Weston, 273 Anzac Pde., Kingsford.  
 2AWM-T. S. Mayne, 15 Marquette St., Emu-  
 2AWH-W. A. Rowe, 25 Central St., Broken Hill, South.  
 2AZB-J. K. W. Bork, 42 Queenscliff Rd., Manly.  
 2AZD-J. W. M. Dodds, 179 St. James Rd., New Lambton.  
 2ZAB-W. T. Boon, Bunnerong Rd. and Frank-  
 2ZAC-W. R. Cox, 44 Park Rd. Hurstville.  
 2ZAH-W. H. Harder, 218 No. 6 Royal Build-  
 2ZAK-D. S. Corrick, 70 Cavendish St., Stan-  
 2ZAR-R. A. Ridgely, 10 Curtin Ave., Abbots-  
 ford, Sydney.

**Victoria**  
 1AD-W. A. S. Buttenant, 14 Barry St., Kew.  
 1AIN-T. Grant R.A.S. R.A.A.F., "Froggall,"  
 via Canterbury.

## R.D. CONTEST RESULTS

(Continued from Page 11)

South Australia		
VK3JN 252	VK4BZ 158	VK3CT 37
3SD 454	3SP 151	3CTU 35
4GZ 439	3FQ 140	4MD 33
5KE 374	5JH 123	5DF 37
5AX 357	5JH 117	5FD 36
5BZ 352	5JH 104	5EA 34
6ML 328	5JH 103	5RI 33
6LQ 258	5TL 101	5RI 32
6N 252	5TL 100	6KA 31
8KP 243	5FJ 97	6CH 20
8DK 238	5AV 95	5OX 19
5OK 197	5FB 70	6CY 19
5ON 192	5JH 73	6CY 18
18L 182	5KF 70	6CA 18
5FM 152	5WL 68	6LL 17
5AP 148	5ZL 68	6BR 18
5XO 172	6TJ 40	6TW 15
5MK 169	5KY 40	6WM 15
5MZ 165	5OR 38	6CT 13
5CE 163	5TQ 36	5KA 9

Western Australia		
VK3KJ 349	VK2ET 20	VK3WT 16
6TP 247	6AG 20	6GM 16
6JF 146	6B8 26	6WT 16
6EZ 141	6BO 27	6SR 15
6GZ 130	6FQ 26	6FQ 15
6LU 129	6SP 24	6GA 14
6TY 100	6AW 23	6ER 14
6L 86	6XG 23	6VM 14
6MD 84	6WG 20	6OH 14
6WJ 74	6LM 23	6PR 14
6FZ 74	6ZI 22	6PR 13
6CV 65	6BC 20	6BR 13
6ZZ 54	6HS 20	6OU 13
6WV 47	6HO 20	6OU 12
6BC 46	6SJ 19	6JH 11
6BR 34	6JP 19	6XV 10
6FB 34	6JW 18	6RK 10
6NT 34	6AP 17	6FG 8
6KW 34	6KW 17	6GL 8
6CC 32	6MR 17	6BW 7
6UF 30		6BC 7

Tasmania		
VK6GM 318	VK7RX 96	VK7XW 34
7JO 314	7HD 89	7NB 29
7OM 313	7CA 89	7UD 18
7DY 294	7BY 78	7CF 17
7WA 288	7CM 62	7HF 17
7DR 224	7AG 50	7GR 17
7TY 175	7BK 48	7AL 16
7RL 165	7AL 51	7L 16
7LZ 143	7HJ 44	7WI 13
7LE 140	7HK 44	7SR 13
7JP 140	7LE 44	7BH 12
7DS 99	7RT 40	7AX 8
	VKM 39	

**LISTENERS' LOGS**  
 F. H. Price - 555 D. Rankine - 178  
 N. G. Clarke - 585 E. W. Trebilcock - 58

3ARI-R. M. Tutton, 65 Hunnifray St., Ballarat.  
 2ATS-K. E. Schermer, Station "Wynna," Mur-  
 toa, Postal: Box 26, Murtoa.  
 2ZAL-R. A. Foot, 43 Munro St., Ascot Vale.  
 2ZAX-R. McPherson, 43 Ballarat Rd., Foots-  
 cray, W.11.  
 2ZAY-D. F. Cooper, St. Mary's Vicarage, Glen  
 Eira Rd., Caulfield.  
 2ZAZ-A. W. D. Wilson, "Bunderant," Glen-  
 thompson.

**Queensland**  
 4EN-E. D. Neale, 38 Felix St., Woolloowin, N.S.  
 Brisbane.  
 450-J. J. O'Rourke, 41 Robertson Ave., Mar-  
 gata Beach.  
 4ZAR-N. A. Roberts, 41 Kent St., Rockham-  
 ton.

**South Australia**  
 5RI-R. L. Laffson, George Rd., Atholstone.  
 5TS-Dept. of Civil Aviation Technicians Train-  
 ing School, Adelaide.  
 5ZAR-E. L. Murray, 35 Dover St., Unley.  
 5ZAE-A. E. R. Wood, 9 Edwin Ter., Gilberton,  
 Adelaide.

**Western Australia**  
 6ZAB-H. H. H. 23 Boulder Rd., Kalgoolie.  
 6ZAD-R. Deverell, 20 Strealey Rd., River-  
 vale.  
 6ZAE-L. K. Epp, 35 Railway Rd., Kalamunda.  
 6ZAK-D. J. Knox, Station, Railway Cottage,  
 Subiaco, Postal: P.O. Box 13, Subiaco.  
 6ZAT-L. N. Tate, 28 Kitchener Ave., Baywater.

**Tasmania**  
 7ZAD-R. D. Nicholls, 30 Pearl St., Wivenhoe.  
 7ZAM-J. R. Midway, Cottage 63, Tarraleah.

**Territories**  
 6SF-P. F. O'Connor, Station Third St., Bar-  
 ooka, Port Moresby; Postal: C/o P.O.  
 Box 58, Port Moresby.  
 6CR-C. W. H. Rasmussen, C/o. Australian  
 M.A.F. Building, Wewak.  
 6ZAL-R. F. Lloyd, Dept. of Works, Single  
 Men's Quarters, Papua Hill, Moresby.

## ALTERATIONS

**NEW South Wales**  
 2CG-476 President Ave., Kirrawee, via Suth-  
 erland.  
 2DS-38 Ella Street, Adamstown, Newcastle.  
 2MA-Hobbs Road, Enfield.  
 2TS-S.S. "Iron Derby," C/o. B.H.P. Ltd.,  
 Newcastle.  
 2VC-98 Flora Street, Sutherland.  
 2AEI-Station, St. Harraders, Postal:  
 P.O. Box 118, Narrandera.  
 2AFX-15 Harris Street, Maryville.  
 2ASL-388 Sydney Road, Balgowlah.  
 2AWP-Wirralps, Herman, via Armidale.

**Victoria**  
 3EZ-252 Walora Road, Macleod.  
 3IR-10 McLean Street, Yarrowonga.  
 3NO-7 Munro Street, Macleod.  
 3AKC-31 Irving Street, Wangaratta.  
 3APN-Boldings Rd., North Hazelwood, via  
 Morwell.  
 3AWN-302a Park Street, South Melbourne.  
 3ZAF-184 Middleborough Road, Blackburn.

**Queensland**  
 4DG-Portable 13 Griffiths Street, New Farm.

**South Australia**  
 5CX-51 Murray Street, Lower Mitcham.  
 5DT-1 Main South Road, Reynella.  
 5TY-1 Forthill Court, North Salisbury.  
 5OK-134 Ninth Street, Salisbury.

**Western Australia**  
 6GK-181 Wylam Road, Chetters, Collie.  
 6LL-28 Withnell Street, East Victoria Park.

**Tasmania**  
 7WI-Station 147 Liverpool St., Hobart, Postal:  
 G.P.O. Box 3718, Hobart.

## DELETIONS (September)

**NEW South Wales** VK3 2NB (now operating  
 under VK2LP), 2OZ (now operating under  
 VK2ADC), 2ANB, 2APG, 2AVB (now operating  
 under VK3VB), 2AXU (now operating under  
 VK3KJ).

**Victoria** VK3 3OK, 3AVD  
**Queensland** VK3 4MI, 4WP  
**South Australia** VK3 5AE, 5BI, 5OU.

**Western Australia** VK6WH  
**Territories** VK3AD.

## DELETIONS (October)

**NEW South Wales** VK3 2RI (now operating  
 under VK3ARI), 2WB, 2ABK, 2AIV, 2AGL.  
**Queensland** VK4MU  
**South Australia** VK3 5DE (now operating  
 under VK2ADI), 5FC

**Territories** VK3YV (now operating under  
 VK2AIR).

# N.S.W. SOUTH WESTERN ZONE CONVENTION

TUMUT, OCTOBER 30-31

This Zone Convention was very well attended and good weather was experienced; a good time was had by all and the Committee of the Zone would like to extend their thanks to all who made the trip, with a special mention for the Newcastle boys accompanied by 2EO.

On Saturday afternoon we got away to a good start with an organised tour of the beauty spots of Tumut, the visitors being most impressed with the beauty spots of the district and the splendid panorama. The evening programme was also a success, starting off with the opening of the Convention by the President of the N.S.W. Division, Jim 2YC, who officially welcomed all visitors. Films were shown by Alf 2BW, from Wagga. Next we had the novelty events such as Pick a Voice, Pick a Tune, and Pick a Box for which Geoff 2BQ did a good job as compere. Further films were shown by 2BW, at the conclusion of which we were shown some really fine slides of the Snowy River Scheme and views of Tumut and district by Mr. Dick Leck, Fire Officer of the Forestry Dept. stationed at Tumut. A very enjoyable evening was concluded with a fine supper, all then adjourned to hotels and homes a little tired after the day's activity.

Sunday commenced with a 144 Mc. Tx Hunt; 2ZAA operated the hidden Tx. Hunt was to the surprise of everyone, the Hunt was won by 2AJO (beam operator) and 2AQE (driver), who just managed to find the elusive Tx just as 2ZAA announced that he was closing down. Other contestants found the going tough in the Tumut Hills, but perhaps we can call the win "beginners' luck." The next event held was the Scramble, which resulted in a win for 2EO and his Hunter Branch assistants.

The Convention concluded with afternoon tea and a general rag chew, many and varied being the conversations. Special mention must be made of the work of the ladies for their effort in serving the refreshments and thus our thanks go out to Mesdames Weeden, Savage, and Misses Jean Piper and Rosalind Weeden.

Those present at the Convention were as follows: 2BW, Wagga; 2RS, 2EU, Albany; 2YC, 2EO, 2VC, 2YB, 2LQ, 2MI, 2GT, 2IQ, Sydney; 2OT, 2XT, 2AOR, Newcastle; 2PL, 2AXD, Griffith; 2AJO, 2AQE, Coolamon; 2BQ, 2PN, 2ZAA, Tumut; 2ARD and Andy Kelso, Cooma. Associates present were Stan Albee, Coolamon; E. Savage, B. Fleck, J. Lovell, J. Smith, L. Ashton, G. Harriman, K. Wilson, all from Griffith; and Ces Cronin, Sydney. Mesdames Moye, Corbin, Weeden, Savage, Harriman, Cahill (Sax.), Phipps, Haberecht, Miss Piper and Miss Weeden.

Results of competitions: Pick a Tune 2ZAA, Pick a Tone Ces Cronin, Pick a Voice 2PL, 144 Mc. Hunt 2AJO/2AQE, Scramble 2EO and the Hunter Branch boys, winners of the Blindfold Contest, 2IQ 6 mins, 2YB 4 mins.

Finally we must congratulate Geoff 2BQ and Ross 2PN on a really fine job of organising this Convention, thanks from us all.



*radiotron*

*I* heard the bells on Christmas Day,  
Their old familiar carols play,  
And wild and sweet  
The words repeat,  
Of peace on earth,  
Goodwill to men.

*Longfellow.*

*With the Season's compliments from*



**AMALGAMATED WIRELESS VALVE COMPANY PTY. LTD.**









# FEDERAL, QSL, and DIVISIONAL NOTES

## FEDERAL

Fed. President: W. R. Groun, VK3WQ.

Fed. Secretary: L. D. Bowie, VK4DU, Box 2611W, G.P.O., Melbourne.

QSL Bureau: E. E. Jones, VK3RJ, 33 Landsale Street, Hill, E. M. B. 13, E. 30.  
 EX-CEC Manager: G. I. Morris, VK3BZ, 58 Eighth Street, Parkdale, Vic.

## NEW SOUTH WALES

President: Jim Corbin, VK3YC.

Secretary: Harry Hicklin, VK3ACH, Box 1724 G.P.O., Sydney.

Meeting Night: Fourth Friday of each month at Science House, Gloucester Street, Sydney.

Divisional Sub-Editor: Ted Whiting, VK3ACD, 16 Loudon Street, Five Dock.

QSL Bureau: J. B. Corbin, VK3YC, 78 Maloney St., Eastlake, Sydney (Inwards and Outwards).

Zone Correspondents: North Coast and Tablelands: Noel Hansen, VK3AH, Ryan Ave., West Kempsey, Newcastle; Ron McD. Stuart, VK3ASJ, 48 Dunbar St., Stockton, Cessnock and Lakes: Harry Hawkins, VK3YL, 21 Confort St., Cessnock; W. J. E. Jones, VK3VH, VK3VH, Camblough, Forbes, South Coast and Southern: Eric Fisher, VK3DY, 3 Oxide St., Warragul; George Adams, VK3VH, 100 St. George's, VK3JAO, Wallace St., Coolamon; St. George's: Chas. Coyle, VK3YK, 84 Carlton Crn., Geelong; Western: Searles, Barry White, VK3AAS, 33 Flavelle St., Concord.

## FEDERAL

### A.O.C.P. AND MORSE CODE

For some time Federal Executive has been making an investigation into the examination net by the Amateur Radio Council for the Amateur Operator's Certificate of Proficiency. This has necessitated a good deal of research and the checking of various results. In particular, the South Western District, the Amateur Administration has given splendid co-operation, in supplying details and summaries on which the Morse Section has been based. The Morse Section, both receiving and sending, presents the greatest difficulty to candidates and it is not surprising that this is the difficulty, but it is worthy of note that sending is often well below pass standard.

Regulations are, for the most part, satisfactory, while the Theory presents only moderate difficulty.

Executive suggests therefore, that those who are engaged in the instruction of candidates for the A.O.C.P. should give some consideration to allocating more time to Code Practice, both Receiving and Sending, and that students be encouraged to do more at home, utilizing the transmissions to be heard on the a.w. bands.

### IT PAYS TO ADVERTISE!

Following an advertisement in "A.R." seeking the services of an Actuary, Federal Executive is happy to announce that Mr. W. Felmore, VK3JAW, has offered his assistance. Bill's anxious task will be to analyze the results of the R.D. Contest of the past, and develop a new approach, which will promote more activity in the Contest and give all States an equal chance of winning.

It is interesting to note that Bill is one of eighteen actuaries in Melbourne, and probably the only one with a knowledge and understanding of band conditions. Members will recollect that the call VK3JAW was frequently heard on the bands some twelve months ago before Bill left for a trip abroad.

## FED. CONTEST COMMITTEE

The Contest Committee met this month at the QTH of the Chairman, Gordon 35U, and about the job of tidying up the results of the R.D. Contest, including correspondence. Opportunity is taken here to point out that the Contest Committee has been receiving all correspondence between it and any Division should come from the Federal Councillor for that Division, although welcomes correspondence under the name of members of the Institute concerning contest matters.

A long discussion took place regarding the Rose Hill Memorial Trophy and the present rules with a view to further improving same before next year's contest.

## VICTORIA

President: G. Dennis, VK3TF.

Secretary: C. Gibson, VK3FO.

Administrative Secretary: M. G. Pickington, Law Court Chambers, 191 Queen St., Melbourne.

Meeting Night: First Wednesday of each month at the Radio School, Melb. Technical Institute.

Divisional Sub-Editor: E. E. Pincott, VK3JAF, 14 Ascotmoor Avenue, Essendon S.E. 11.

QSL Bureau: Inwards—Graham Roper, VK3EZ, 16 Lucas St., South Caulfield, Vic. Outwards—Frank O'Dwyer, VK3OF, 180 Thomas St., Hamilton, S. V. Vic.

Zone Correspondents: Central Western: W. J. Kincaid, VK3AKW, Magdala, Lubeck, South Western: W. Winters, 11 Redford St., Warrnambool, and E. Giddings, VK3JAN, 3 Nelson St., Warrnambool, North Eastern: A. D. Buchanan, VK3PD, "Eccobrood" Wahroing, Far North Western: M. Folie, VK3JZ, 101 Lemon Ave., Mildura, Eastern: C. J. Arnold, VK3AJA, McAlister St., Stratford, North Western: C. Case, VK3ACE, Canning Ave., Birclyp S.W. 1. Group: John Wilson, 37 Raymond St., Alphington, N.30.

## QUEENSLAND

President: Harold Murphy, VK4HM.

Secretary: W. A. Young, VK4YA, Box 6383, G.P.O., Brisbane.

Meeting Night: First Friday of each month at the Royal Geographical Society Rooms, Ann Street, Brisbane.

Divisional Sub-Editor: J. T. Hope, VK4KL, Royal Parade, St. John's Wood, Ashgrove.

QSL Bureau Inwards—J. Pines, VK4JF, Wanda St., Wanda, Queensland—Miss Carol O'Brien, 83 Jardine St., Stafford.

The Federal Policy Day was discussed, because National policy dictates that alterations to rules must be notified to all Divisions three months before the contest, insufficient time remains to make any alterations to the rules. Therefore, Federal Council's directive in this regard will receive attention during the forthcoming year.

General discussion then took place and it was agreed to continue the use of the old Committee and handle the very remaining 1953 VK-ZL Contest Certificates, and it was also suggested that the use of certificates for any past contests would be straightened out. Should any Amateur still be in the position of not having received a certificate to which he is entitled, would he contact his Division or the Contest Committee direct.

A statistical summary of the R.D. Contests by Division, and the results of the R.D. Contest, handed over to Contest Manager, Jim BPO, who is employed in the Statistical Department of the S.B. Government. He will report back to the Committee at the next meeting.

The matter of publicity for W.I.A. Contests and the lack of information available to the Committee regarding overseas contests was discussed at length, and it was decided to take this matter up with F.E.C.

The F.E.C. Committee, the newly constituted Federal Contest Committee has done a sterling job considering all the handicaps it has had to overcome. Taking the form of a contest in a new nation-wide organization such as the Institute inevitably leads to some confusion and misunderstanding. The new Contest Committee of the Council, produced a Manual for the Guidance of Federal Councillors to overcome a similar problem to that in which the Contest Committee is now confronted. A manual is now being prepared for the guidance of Contest Committee in which many suggestions of the present Committee will be incorporated. The introduction of a coherent and straight forward Terms of Reference, and Constitution, complete and complete, will help to eliminate any misunderstandings in the future. In the meantime we sympathise with the members of the present Committee and applaud them for their strenuous efforts to make this year's contests a real success!

## FEDERAL QSL BUREAU

RAT JONES, VK3BI, MANAGER

Referring to a pay in these notes in the November issue, additional information on Fletcher Island, Ice Island 23, has come to hand. This floating ice island was discovered in 1850 and found to be large enough for human habitation. Although the island was constantly moving, its approximate position was about 40 miles from the geographic North Pole. The first personnel landed there in March, 1953, and the island was abandoned by the Ameri-

## SOUTH AUSTRALIA

President: G. M. Bowen, VK3KU.

Secretary: R. G. Harris, VK3RL, Box 1234K, G.P.O., Adelaide, Telephone: J 131.

Meeting Night: Second Tuesday of each month at the R.M.S. Club, Adelaide.

Divisional Sub-Editor: W. W. Parsons, VK3BN, 10 Victoria Avenue, Rose Park.

QSL Bureau: Inwards—Vernon, 8 Brook St., West Mitcham, South Aus. (Inwards and Outwards).

## WESTERN AUSTRALIA

President: F. A. T. Tredra, VK3FT.

Secretary: J. Mand, VK3EL, Box N1003, G.P.O., Perth.

Meeting Place: Perth Technical College Annex, Mounts Bay Road, Perth.

Meeting Night: Third Tuesday of the month, Divisional Sub-Editor: D. E. Graham, VK3KH, 115 Edinboro St., Hawthorn.

QSL Bureau: Jim Rumble, VK3RU, Box 7319, Perth, West Aus. (Inwards and Outwards).

## TASMANIA

President: L. E. Edwards, VK3LE.

Secretary: W. G. Tait, Box 371B, G.P.O. Hobart.

Meeting Night: First Wednesday of each month at the W.I.A. Club Room, 147 Liverpool Street, Hobart.

Divisional Sub-Editor: L. E. Edwards, VK3LE, 126 Strickland Ave., Hobart.

QSL Bureau: Ray Calvert, VK3RT, Box 371B, G.P.O., Hobart, Tasmania.

Zone Correspondents: Northerly: M. A. Chaplin, VK3CA, 68 Trevelyan Rd., Launceston; North Western: W. Wilson, 11 Cunningham St., Burnie, Tasmania.

can on 22nd May, 1954. Life on TV was not pleasant. Beldom was the sky free of drizzly fog and haze. Gale force winds and extremely low temperatures had to be battled by those who were on duty.

Geoff Warner, ex-VK3GW, who has been abroad for some months, duly arrived back in VK on Wednesday night. A brief stay in VK3 will settle down in VK3 and be heard from that location.

Jim HSID, ex-TAS3FA, is leaving Bangkok, Siam, on return to U.S.A. He does not know whether his successor is an Amateur or not. He expects to depart on 1st February.

GAOUV has a special card for stations to whom he has sent a previous QSL and not had any reply. The repeat card is printed on a special kind of tinted paper, one side rough and the other smooth. The paper is perforated at each end, apparently for tearing from a roll. One end, the maker's inscription, "Sprim's Germicide."

One of the many Amateurs engaged in missionary work throughout the world is the Rev. Walter Sandman, CE3RW. He is a Roman Catholic priest stationed at Molina in Chile and he is active on both 7 and 14 Mc. w.v. and seeks VK contacts. He uses a 400W. 802L 7B and a full wave Herz.

A patty QSL card from EASDF, located in Rio de Janeiro, Brazil, has been received. The operator is Cesar Yague, ex-EASBI. He modestly says he is a first-class telegraphist and seldom transmits any Morse code.

Treb states he recently received the largest QSL card ever. It is that of WIAFP and measures 6 1/2 inches by 10 1/2 inches. I am very happy that guy has a QSL card. I am very happy that guy has a QSL card. I am very happy that guy has a QSL card.

The latter effect is a modest 8 x 1 inches. Len Schooley, Wheatland, Okla., U.S.A., recently received his novice ticket and call of WN3EGW at the ripe old age of 73 years.

The calendar reminds me that it is once again time to include a Xmas Greeting in these notes. For the 25th time it gives me great pleasure to assure you of my very best wishes for a Happy Xmas and a healthful 1955. May the new year see no unclaimed cards left on hand! This goes for all Amateurs too.

## NEW SOUTH WALES

The general meeting of the N.S.W. Division was held under the chairmanship of the President on October 22 before a good attendance. After the new year resolutions had been dispensed with, the meeting was handed over to the lecturer, Mr. C. Bardwell, B.N. of the Marconi Society of Warragul, who gave a most informative lecture on "The Importance of Fundamentals to Amateur Operators." During the lecture Mr. Bardwell stressed the need for the operation of a 100W tx through 115 several stages and pointed out the desirable features

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**MIC 36**



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Housed in attractive plastic case, this Microphone is ideal for home recording and public address, etc. Response unexcelled for its size and price. The performance is not affected by vibration, shock or low frequency wind noise. Omni-directional frequency response substantially flat from 30 to 7000 c.p.s. Recommended load resistance not less than 1 megohm dependent on low frequency response. Can be supplied complete with switch and floor stand adaptor as required at a small extra cost.

Designed to meet even the most exacting requirements, this Microphone incorporates the world famous floating crystal sound cell construction. Its special characteristics are that its fine performance is not affected by vibration or shock. The fidelity is not impaired by low frequency wind noise.

#### SPECIFICATION

Recommended load resistance—not less than 1 megohm.  
Output level—-55 db ref. 1 volt/dyne/cm<sup>2</sup>.  
Frequency response—substantially flat from 30 c.p.s. to 10,000 c.p.s.  
Directivity—non-directional.  
Size—2½" spherical diameter.  
Connector—Standard International 3-pin.

**MIC 16**



£24/19/6

**MIC 35**



£2/15/-

substantially flat response from 50 to 5000 c.p.s.

#### SPECIFICATION

Output level:—55 db ref. 1 volt/dyne/cm<sup>2</sup>.  
Cable—approx. 4 ft. of co-axial supplied.  
Weight—8 ozs. unpacked, 7 ozs. packed.  
Dimensions—microphone only 2½" x 2½" x 1"

The MIC 35, undoubtedly the best value ever offered, is ideal for amateur transmitters, public address, etc. Housed in an attractive die-cast case, it features a high sensitivity and substantially flat characteristics. Provided with a built-in shunt resistance of 2 megohms, it will, when connected to the grid of the input valve, give a

This omni-directional Microphone is robust in construction, with a pleasing appearance. Vibration, shock or low frequency wind noise will not affect the performance. The low frequency cut-off is dependent on the load resistance. The cut-off is given by the quotation,  $F = 80 + R$ , where  $F$  = c.p.s.,  $R$  = megohms. An adaptor (floor mounting) is available at low extra cost.

#### SPECIFICATION

Output level = -50 db ref. 1 volt/dyne/cm<sup>2</sup>.  
Output impedance—equivalent to approximately 0.002 uF. (0.8 megohm at 100 cycles).  
Frequency response—substantially flat from 40 to 6000 c.p.s.  
Recommended load resistance—not less than 1 megohm, dependent on low frequency response.

**MIC 22**



£9/18/6

**MIC 28**



£5/19/6

Designed to give freedom of movement, this Microphone is small and non-directional. Housed in a soft moulded rubber case, which gives protection against shock, it is provided with a pin at the rear of the case for pinning to the lapel.

#### SPECIFICATION

Output level—approx. -55 db ref. 1 volt/dyne/cm<sup>2</sup>.  
Recommended load resistance—5 megohms.  
Frequency response—level throughout the whole of the audible spectrum.  
Capacity—0.0015 uF. at 1000 c.p.s.  
Impedance—100,000 ohms at 1000 c.p.s.  
Cord—6 ft. shielded cable.  
Size—1-9/16" wide x 2½" long x ¾" thick.

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**MIC 33**



£6/18/6

#### MICROPHONE INSERTS



(MIC 32 illustrated)

#### CRYSTAL MICROPHONE INSERTS

These inserts are available in varying sizes ranging from as small as 15/16" square to 1-13/16" round, with various thicknesses from 7/32" to 9/16". Suitable for every purpose such as hearing aids, public address, tape recording, amateur broadcasting, etc., they have responses from 2250 c.p.s. to 3500 c.p.s. at 5 db to 30 db. Insert can be supplied with or without 10 meg. resistor as required.

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#### MICROPHONE INSERTS



(MIC 23 illustrated)

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you can put the s.w.l. notes in with mine! That gives you four columns. What will!

Once again there is a man about QSL cards not being available. I'm not taking sides in this affair, but I would like to remind you that the cards are coming. The Bureau is manned by voluntary workers and there is a terrific amount of work involved. If for some reason or another there have been some delays in the mailing of the cards, what about offering them some assistance. Possibly if they had to spend less time sorting the cards, they could have more time to come to the meeting, or if they can't, maybe one of you would like to bring the paleobooks in for them. The ball is now in your court. May I ask you to start by reading the Federal Contest Committee Notes on page 19 of November issue.

I hate having to refer you to the writings of my dear friend, (Bobby) "Keweenaw"—there must be some tie up between that expression and the advert that went with the notes he had in the press, but for the moment it is not relevant, but it contains some darned good advice. Ourh! That sure hurt. Now Pansy is in this discussion, it is to be hoped that the VK3 Council can see through this diabolical scheme to avoid paying his subs. Bet he had himself in mind when he wrote about the oldtimers last month. Whist! I'm in a battling mood. I've a pair of old timers and they sure are dud! He's off the air now—Ed. That sure say he won't name the source of my copy of the "Advertiser" in the first place. He's been accused.

I hear there is keen rivalry between 35X and 34HC in the shack-painting contest. Russell favours a different colour for each wall whilst David would have them all green, and a yellow ceiling or is it other way round? Personally, I like "cement sheet grey" edged with "spiderweb white" for the walls, and "blue and white" for the ceiling. In other words, "what use is a shack if you can't make a mess in it!"

The Technical Editor has saved up his salary from "A.R." for the last three months and has voted in a new, very valuable, Bureau Sir, you do not intend to mount loose, beams, etc., on the shiny pieces of "chicken bait". Arent the notes last issue "Pastor" a bit of a busy looking up "anent" the Hon. Fed. Sec. asked permission to go on the air this month. When I granted his request, I forgot to mention that he was using this month for the Dinner and the Convention. Federal matters will, therefore, be held in abeyance until December. Don't David you go to the school for the holiday then. Remind me to get on the school teaching racket some time.

That hard working body whose palms are tired and sore, and who never seems to get his own trumpet, so I'm taking it on my own shoulders to do a bit of blowing for them. On my calculations they devote something like 190 hours per month of their own time in getting the magazine out. More often than not they work until well after midnight on the job, and at present they are flat out looking for ways and means of improving the mag. If anybody has any suggestions to make, drop a note to the Editor. I can assure you it will be acknowledged, even if I have to do it myself. Even more important is the flow of technical articles, without which there can be no mag. If all in this line, I would especially direct attention to the piece on page 17 of last month's topic concerning special issues. What about it fellows?

#### NO METRE TRANSMITTER HUNT

The 80 mx Tx Hunt held on Sunday, 17th October was a most interesting one. It certainly was a hunt, and was truly baffled. Only one competitor, Reg 32AD arrived on the location without opening his sealed envelope. A fairly easy case was made out for the air at 2.50 p.m., and this fooled all the competitors into thinking that the tx must be hidden quite some distance out from the city, and away from the gardens. It was not in various directions heading well away from Melbourne. However, to everyone's surprise the tx, which was hidden by Reg 32AD, was located in the Fitzroy Gardens in East Melbourne.

After about three-quarters of an hour the somewhat crestfallen competitors started to turn up at the Gardens with opened envelopes, but were informed that the tx had not yet been found and so then the fun started. Eric then let the wires and non-competitors into the secret. He had hidden the tx in a pram, complete with cushion, shawl and storm cover, and had made it very difficult to find. He hid the pram around the gardens. The aerial was wound around inside the pram and this accounted for the weak signal at the start. As the boys imagined, the boys' field strength meters were giving very unusual signals as the pram was wheeled up and down the Gardens, at times making a complete circle around them. It was at least an hour later before Laurie 34LY picked up enough courage to ask to see the baby.

## OBITUARY

**BOB DUNCAN**  
The Members of the Victorian Division of the W.I.A. were shocked to learn of the sudden passing at a Private Hospital in East Malvern of Bob Duncan, of Murrumbidgee, on 2nd November 1954, at the age of 72 years.

Bob was Vice Secretary of the Victorian Railways Institute Radio Club, VKERI, for the past ten years. He was a very active worker in the interests of the Club and Amateur Radio.

Although Bob was not a licensed Amateur, his saddest efforts are reflected in his Club activities, and his obituary notice from VKERI was a tradition on 50 Mc. and later on the 30 Mc. band.

He leaves a wife, three daughters and one son in mourn the loss of a husband and father. We extend to them our deepest sympathies in their loss and a large number of friends attended the funeral at the Springvale Crematorium.

In private life, Bob was a Class "A" Signaller in the Victorian Railways, a prominent Freemason, and a First World War veteran.

However, it was one of the funniest Tx Hunts ever experienced by the onlookers, as they watched the amazed expressions on the boys' faces as the meters gave what seemed to be very screwy signals when the pram passed within a few feet of them and it also caused great amusement to the onlookers to see the boys stepping most politely out of the way of the pram. The Hunt was attended by 38 of the gang, most of whom had a pleasant time together by the river at Studley Park after the Hunt had concluded. Congratulations to Eric for a most enjoyable afternoon and also congratulations to the married couple who wheeled the pram and who, somehow, managed to keep straight faces during the whole of the afternoon, they didn't give a thing away. Thanks Phil.

Our heroes, the 3VZ/3Xs combine really fell down. They actually had to make their maps to find the location. To get there they covered something like 25 miles, all the time vowing and declaring it was not on. Anyway, they eventually reached the Gardens and used field strength meters and other highly secret devices they use. Extremely strong signals were present, but had a bad habit of moving around now here, now there. Jack, always the gentleman, kept politely stepping out of the way of the lady with the pram, who always seemed to be barging him just as the signal was becoming stronger, thus upsetting his carefully compiled calculations. After 30 minutes of this he decided to get in the ladies' good graces, by asking if he could see the baby. That baby showed more signs of mmii activity than Buny Buny, as it was a very small rum baby, consisting of a Type 3 and battery.

The next meeting will be held on Wednesday, 1st December at the usual place. A film night has been arranged and you are asked to bring along the XYL or YL. I'm sure that the phrasing is correct, but you know what I mean! and make a night of it.

#### CENTRAL WESTERN ZONE CONVENTION

It is my endeavour to carry on the good job that has been done by our predecessors in this field. Our Annual Convention was held on 10th October at Reed's Lookout in the Grampians and it was a great show. A number of visitors were welcomed from neighbouring zones. The present were LYN 3ARL, Melbourne, Bob 3IC, Geelong Bill 3ATJ, Red Cliffs, John 3AGD, Bunkled, Red Cliffs, and 3VZ/3Xs. Coleraine, Ray 3ATN Birchlip. Locals included 3AFO, 3NN, 3DP, 2TA, 3ATN, 3ATR, 3EF, 3XC, 3AGR, 3AKP, 3XLY, 3YL, Junior, and all with a few Geoff Oaks and a few Modern.

After a picnic lunch a Scramble was held resulting in John 3AGD and Neil 3HG sharing the prize. The 3 mc activities were very successful as signals as the 30 Mc. band. A power pack of the tx decided to take the afternoon off.

The meeting resulted in the following officers being elected. President, Mr. Trev. Rodda, 3ATR; Vice-President, Mr. James Farrer, 3DP; Secretary and Treasurer, Mr. J. Kinsella, 3AKP. We were sorry that Alan 3XZ was unable to be present, as he had not quite recovered following his rather serious accident some months ago. Anyways, we wish you the best Alan and hope that you will soon be 100 per cent. again.

In future the zone book-ups will begin about 2000 hours in the 80 mx band.

#### NORTH EASTERN ZONE

Chas 3ACW was unfortunate in having to take part in operations connected with the tragic

aircraft accident at Mangalore on 31st October. Doug 3JJ left Mangalore on 30th October to take up his new appointment after some leave. Incidentally, we are pleased to hear from Rex 3UR from time to time. Keith 3JC is understood to be devoting his spare time to house building now, as Stan 3AGT was some time ago. Alan 3XJ is on the v.h.f., but Ken 3KH is working the DX on 20 mc. Des 3BP is thinking of v.h.f. and also trying for some DX on 30 mc. Opportunity has not offered a contact with Peter 3APF lately, neither have Len 3ALE, Johnny 3AK, nor Alex 3AT been heard and reliable information has it that Murray 3BZ1 many other interests keep him busy. Jim 3JK is not down in the notes this month. B.C.I. cramps the style of Howard 3YV on 80 mc. Slep will have to be taken to ascertain what Jack 3ARL does in the way of Amateur Radio now. 3XU was noted in the list of changed addresses in last month's call sign amendments.

Lex 3AIL was heard on 80 mc one afternoon recently, but Jack 3PF and Vex 3ABX have not been noted, and, although a little has been heard of his principal "off-sider," nothing is available of Hugh 3AJF himself or his radio

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Type 555—5 watts.  
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Sec.: 7,100 ohms per side.  
Response: 500-7,500 c.p.s.

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Type M175—2.5-75 watts.  
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Type 703—15 watts.  
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Type 705—15 watts.  
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Prim.: 10,000 ohms P.P.  
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**LOOK FOR THE SILVER-GREY TRANSFORMER**



## Page 23



# INDEX TO VOLUME 22-1954

The 71D rig is slowly nearing completion, recently Tiny borrowed an audio oscillator to check the bandpass of the modulator to see that it cuts off at 5 Kc.—it shouldn't be long now. Evidently TNC seen recently demonstrating a c.r.o. watch timing machine at a local jewelry show—a most intriguing device, too. Congratulations (or should it be condolences) to Peter TFF who recently got married. Anyway, very best wishes to you both and I hope it doesn't mean a shutting down of v.h.f. activities Peter; the new QTH should be the goods for DX.

## NORTHERN ZONE

With the advent of finer weather DXW is busy brushing the cobwebs from the 2 mtr. rig for field days, actually Chris has lately built up his own kxta controlled job for the purpose. Last month TLE, together with TML and TCA, spent a few nights up on Mt. Arthur whilst installing some v.h.f. gear. Almost nightly contacts were made with Launceston, some of them almost went into the hours of the morning. Two VK3 stations were worked by TLE as well as some of the coastal gang and Flinders Island.

TFF is busy sitting up in Launceston again and has a tx at his disposal to while away the hours. He had some trouble sending signals out for a while, especially when he was listening on 2 mtr. TAM is still waiting for that new car! What with British doctors' strikes and now Australian wharves adding to it TFF has taken unto himself an XYL. TLE went along to represent the fraternity, TFF has a new rack and power supply so Les TAM will have to wire in those transformer taps again to keep his rig to the fore in that area.

A very interesting evening was spent in a joint I.R.E./W.I.A. inspection of D.C.A.'s D.M.E. and radio installations. To many of us it filled a long felt want to be able to actually see it in operation—that is D.M.E. and not just reading about it. TFF as usual ably conducted us around the installations. D.C.A., by the way, has a card on the air on 1.5 Mc. with 1 Kc. mod., so it will be a very useful marker for the Interstate v.h.f. band gang.

## HAMADS

1/- per line, minimum 3/-.

Advertisements under this heading will only be accepted from Institute members who desire to dispose of equipment which is their own personal property. Copy must be received by 8th of the month, and remittance must accompany advertisement. Calculation of cost will be based on an average of six words a line. Dealers' advertisements not accepted in this column.

**AMR200** Comm. Revr., 5 switched bands, bandwidth 1.5 to 30 Mc., variable i.f. bandwidth control, xtal filter, phasing, a.e.c. c.w. and mod. b.f.o., two stages r.f., 8 meter, power supply relay controlled for send-receive, 230v. input, 10 in. speaker, circuit and notes, 1st six valves new, good condition, £75. Evenings or week-end. Stevenson, 11a Maud St., Ormond, Vic.

**FOR SALE:** Bendix TA12D complete with modulator, genemotor unit, tubes and plugs. Take reasonable offer. 256 Malop St., Geelong, Vic.

**FOR SALE:** British RF24 three-valve converter, unused, modified for 10 and 15 mc., £8/10/-; RF26 converter, similar design, 36g/Mc., unused, £50 for complete unit in rack or will consider each item separately. Palec Valve Tester, etc. Model VCT-V. Mod. Oscillator, Zenith, Model 512, 160 Kc. to 25 Mc. in five ranges. Replies to "Tender." Box 1234K, G.P.O., Adelaide, before 18th Dec., '54.

**FOR SALE:** TA12D Tx modified for Ham bands, 60w. modulator with Trimax mod. transfr., 600v. 200 Ma. 866 power supply. Best offer above £30 for complete unit in rack or will consider each item separately. Palec Valve Tester, etc. Model VCT-V. Mod. Oscillator, Zenith, Model 512, 160 Kc. to 25 Mc. in five ranges. Replies to "Tender." Box 1234K, G.P.O., Adelaide, before 18th Dec., '54.

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